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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KOPPIKAR, VIVEK D

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,910

Applicant(s)

JACQUET, JEAN-CLAUDE

Examiner

Vivek D Koppikar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-25 and 29-34 is/are rejected.
- 7) ☒ Claim(s) 26-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

FINAL OFFICE ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 18-21, 23-25 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/10234 to Maurice in view of Japanese Patent Number to Kumio (hereafter referred to as JP'309). (Note: US Patent Number 5,689,391 is the US equivalent of WO 91/10234 and a copy of this US reference has been included in this Office Action for applicants' convenience).

With regard to Claims 18 and 20, Maurice teaches a magnetooptic read head with a magnetooptic effect layer (11), a layer of nonmagnetic material (10) and a magnetic layer (9) (Translated Abstract). The nonmagnetic material (10) includes silicon (Page 6, Ln. 13-22).

The magnetic layer (9) in Maurice is not multilayered.

JP'309 teaches a magnetic head core which is a multilayered structure of magnetic layers (2) disposed between nonmagnetic layers (3). The magnetic layers (2) have a greater wear resistance than the nonmagnetic layers (3). This magnetic structure exhibits a high degree of reproducing efficiency and a long life (Translated Abstract).

At the time of the invention one of ordinary skill in the art would have been motivated to replace the single magnetic layer (9) in Maurice with the multilayered structure in JP'309 with the expectation of obtaining a magnetic head exhibiting excellent reproducing efficiency in a

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high frequency range and a head with a long life because of the arrangement of the non-magnetic layers in between the magnetic layers.

The examiner takes the position that, in the magnetic head of Maurice in view of JP'309, the wear coefficient of nonmagnetic layers in the magnetic structure (3) and the nonmagnetic layer (10) are substantially equal since they are both made of nonmagnetic materials. The nonmagnetic material in Maurice includes silicon while JP'309 does not limit the nonmagnetic material to specifically exclude silicon (Translated Abstract).

With regard to Claims 19 and 21, the magnetic portions (2) of the structure in JP'309 are made of Fe-Al-Si alloys (Translated Abstract) while the layer (11) in Maurice with the magnetooptic effect is also made of an Fe-Al-Si alloy (Page 8, Ln. 1-5).

With regard to Claim 23, in the magnetooptic read head of Maurice in view of JP'309 the magnetooptic layers as well as the layer with the predetermined magnetic permeability comprise similar materials as compared to the respective layers of the instant invention. In addition the layers of Maurice in view of JP'309 as well as the respective layers in the instant invention have the similar lengths. Therefore, the examiner takes the position that the total thickness of the first plurality of magnetic sublayers (2) in JP'309 in view of Maurice is less than the diameter of the particles produced by a wear of materials of the read head or of a medium to be read.

With regard to Claims 24-25, the magnetic layers (2) and the nonmagnetic films (3) in JP'309 have a thickness of less than 4 microns (Translated Abstract).

With regard to Claims 33-34, Maurice teaches using the read head with a substrate (30) and a backplate (33). According to figure 6a the substrate (30) and the backplate (33) have an equal thickness (Page 8, Ln. 9-30 and Figure 6a).

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3. Claims 22 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurice in view of JP'309 as applied to Claim 18 above and in further view of US Patent Number 4,660,175 to Strand.

Maurice and JP'309 do not teach using silicon nitride as the non-magnetic material or a protective layer nor do they teach using it as an optical coupler.

Strand teaches using silicon nitride in a data storage medium as a non-magnetic layer and optical coupler because of its versatility as a material possessing chemical and moisture resistance (Col. 2, Ln. 59-64). At the time of the invention one of ordinary skill in the art would have used silicon nitride in the magnetic head of Maurice in view of JP'309 with the expectation of obtaining a magnetic head with greater chemical and moisture resistance.

Allowable Subject Matter

4. Claims 26-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to Claim 26, neither Maurice nor JP'309 teach using 30 magnetic sublayers that alternate with 30 nonmagnetic sublayers.

With regard to Claim 27-28 the prior art of record (Maurice and JP'309) does not teach or suggest a reflecting layer which is present between a magnetic and non-magnetic layer.

Response to Arguments

5. The claim objections and the 35 USC 112 rejections set forth in the Office Action dated May 21, 2003 have been withdrawn. The amendment filed on September 22, 2003 has satisfactorily overcome these objections and rejections.

6. Applicant's arguments filed September 22, 2003 with regard to the 35 USC 103 rejections have been fully considered but they are not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The applicants argue against Maurice and JP' 309 separately and do not argue against the motivation for combining the concept of modifying Maurice with the alternating magnetic and nonmagnetic sublayers of JP'309.

Applicants go on to argue that neither Maurice nor JP'309 teach or suggest (i) magnetic layers configured to close a magnetic circuit, (ii) at least one layer of nonmagnetic material having a predetermined wear coefficient greater than a wear coefficient of a multilayered structure and (iii) a second plurality of sublayers made of a material having a wear coefficient substantially equal to a wear coefficient of the at least one layer of a nonmagnetic material.

The examiner takes the position that the magneto optic read head of Maurice in view of JP'309 includes magnetic layers configured to close a magnetic circuit (9), a layer of nonmagnetic material (10) having a predetermined wear coefficient greater than a wear coefficient of the multilayered structure and a second plurality of sublayers made of a material having a wear coefficient substantially equivalent to a wear coefficient of the at least one layer of a nonmagnetic material. These arguments were set forth in the rejections above.

The applicants claim that during the interview conducted at the PTO on July 30, 2003 the applicants' counsel argued that one skilled in the art would not have substituted layer (9) for closing a magnetic circuit in Maurice with a magneto optic layer (2) in Kumio to achieve a better

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wear coefficient because the magnetooptic layer (2) in Kumio corresponds to a magnetooptic layer (11) and not to the layer (9) in Maurice.

The examine takes the position that there is motivation to combine these two references because in both the layer (9) in Maurice and the layers (2 and 3) in the magnetic portions are made of alloys of Fe, Al and Si. There is motivation for modifying the layer (9) of Maurice with the structure of JP'309 since this modified magnetic layer system (denoted as 2 and 3 in JP'309) results in higher magnetic permeability and high saturation magnetic flux density as well as excellent reproducing efficiency as recited in JP'309. These properties improve the performance of the magnetooptic head.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Vivek Koppikar** whose telephone number is **(703) 305-6618**. The examiner can normally be reached on Monday-Friday from 8 AM to 5 PM, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones, can be reached at (703) 308-3822. The fax phone numbers for the organization where this application or proceeding are assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Vivek Koppikar

11/25/03


DEBORAH JONES
SUPERVISORY PATENT EXAMINER